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A contribution to the systematics of *Desmomys* Thomas, 1910 (Rodentia, Muridae) with the description of a new species

Leonid A. Lavrenchenko

Abstract. Morphometric and cytogenetic analyses reveal that the genus *Desmomys* comprises two distinct species, both of them are endemic to Ethiopia. A new species, *Desmomys yaldeni*, is described and compared with *D. harringtoni* which is widely distributed throughout the most part of the country. The newly described species is known only from two localities in south-western Ethiopia. The two *Desmomys* species differ in their external characters, cranial morphology and karyotypes. *D. yaldeni* n. sp. has the same diploid chromosome number (2n=52) as *D. harringtoni*, however, C-banding reveals substantial differences between these two species. Besides that, they can be distinguished with the multivariate analysis of cranial measurements. *D. yaldeni* has relatively shorter and narrower toothrows what might be considered as an adaptation to the diet consisting of invertebrates and/or fruits and berries.

Key words. Rodentia, Muridae, *Desmomys*, systematics, craniometry, chromosomes, biodiversity, endemics, Ethiopia.

Introduction

Desmomys Thomas, 1910 was listed as a genus by Allen (1939), but has for a long time been treated as a subgenus of *Pelomys* Peters, 1852 (Ellerman 1941; Yalden et al. 1976; Rupp 1980; Corbet & Hill 1991; Yalden & Largen 1992). However, Musser & Carleton (1993) concluded that unique dental patterns confirm the generic status of the former taxon despite its resemblance to *Pelomys* and *Mylomys* Thomas, 1906 in general external traits and cranial conformation. As it was supposed (Yalden et al. 1976; Yalden & Largen 1992; Rupp 1980) *Desmomys* comprises only two taxa, *D. harringtoni* (Thomas, 1903) and *D. rex* (Thomas, 1906). The former species is endemic to Ethiopia, being widespread on the both western and eastern Ethiopian plateaux between 1800 and 3300 m a.s.l. (Yalden et al. 1996), the latter is known only from the type specimen (skin without skull) collected by Peter Zaphiro in the Charada Forest, Southern Ethiopia (07°25'N 36°45'E, 1800 m a.s.l.) (Fig. 1). *Desmomys rex* was primarily described by Thomas (1906) as a species of *Arvicanthis* Lesson, 1842, but later "provisionally considered as a giant member of *Desmomys*" (Thomas, 1916). Dieterlen (1974) regarded status of *D. rex* as uncertain and Corbert & Hill (1980) omitted it from the first edition of their checklist, but Yalden et al. (1976) accepted its validity and Yalden & Largen (1992) included this species in their check-list of Ethiopian endemic mammals. Recently, Musser & Carleton (1993) stated "our study of the holotype skin reveals it to be a large and probably old adult of *Mylomys* that is not as brightly pigmented as most samples of that genus. Whether

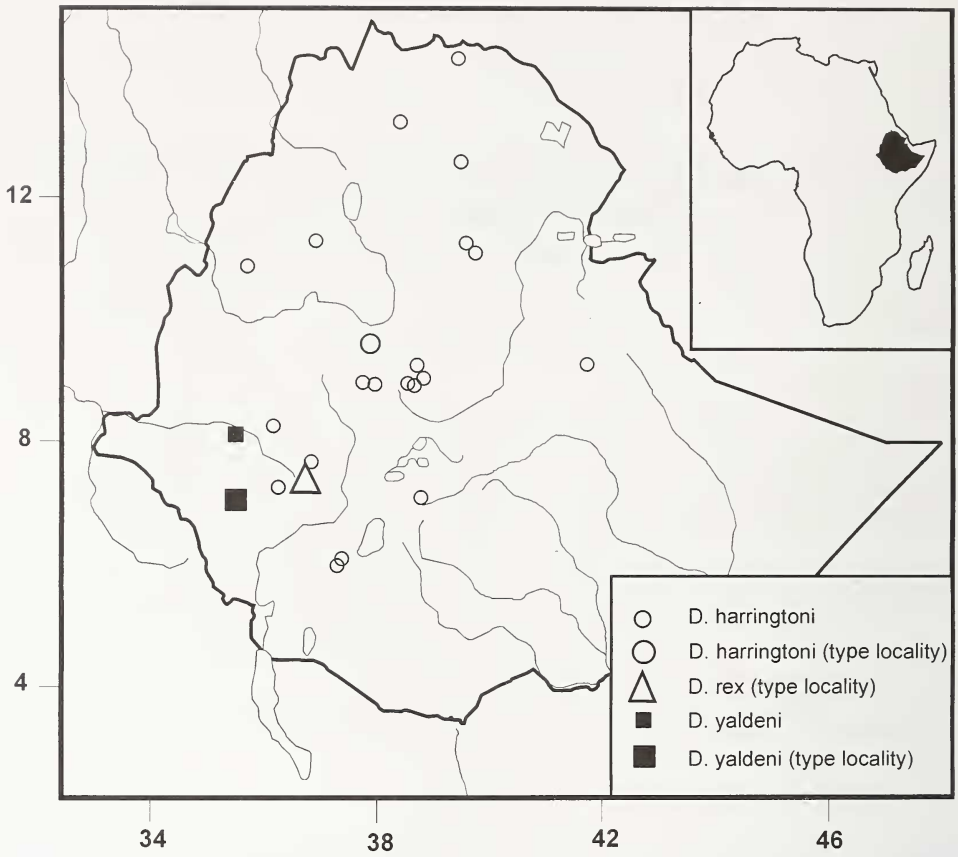


Fig. 1. Geographic distributions of *Desmomys* species in Ethiopia. Distribution of *D. harringtoni* after Yalden et al. (1976, 1996) and Guttinger et al. (1998).

the holotype actually came from Ethiopia, or represents a separate species of *Mylomys* are unknown; we provisionally list *rex* in the synonymy of *M. dybowskii*". This treatment of "*Desmomys*" *rex* has been followed in the final part of the Catalogue of Ethiopian Mammals (Yalden et al. 1996); nevertheless these authors asserted that "there is no reason at all to suppose that the type specimen of *rex* was not obtained by Peter Zaphiro during his 1904–1905 expedition to southern Ethiopia; not least because the skin still carries a label bearing the distinctive handwriting of this collector".

So, only one species, *D. harringtoni*, is currently recognized in the genus *Desmomys* endemic to Ethiopia (Musser & Carleton 1993; Yalden et al. 1996). During fieldwork of the Joint Ethio-Russian Biological Expedition (JERBE) in 1999 two *Desmomys* specimens which could not be identified with *D. harringtoni* were collected in the Sheko Forest. A subsequent examination of the collection in the Natural History Museum (London) yielded a further specimen from Gore. The

purpose of this paper is to describe and diagnose the new species of *Desmomys* from south-western Ethiopia and to provide some comments on systematics and contents of the genus.

Material and methods

Sampling, species and museums: Field work in Ethiopia was carried out during 1998–1999 in the framework of the JERBE. Specimens were captured in the following localities: 1. Menagesha Forest (08°57'N 38°33'E, 2800 m a.s.l.) – 3 *D. harringtoni*; 2. Sheko Forest (07°04'N 35°30'E, 1930 m a.s.l.) – 2 *Desmomys* n. sp. All these specimens are deposited in the collection of the Zoological Museum of the Moscow State University (ZMMU). Besides that thirteen *D. harringtoni*, one *Desmomys* n. sp. and one "*Desmomys" rex* (Thomas, 1906) housed in the collection of the Natural History Museum, London (BMNH) were examined.

Specimens examined: ***Desmomys* n. sp.**, n = 3: Ethiopia, Sheko Forest, ZMMU S-167311-12, 2 ♀♀; Ethiopia, Illubabor, 2 km west of Gore, BMNH 72.419 ?. ***Desmomys harringtoni***, n = 16: Ethiopia, Menagesha Forest, ZMMU S-165981-82, S-169876, 2 ♂♂ and 1♀; Ethiopia, Meta Abo, Sabeta, BMNH 72.467, 70.751, 1♂ and 1♀; Ethiopia, 23 km N.W. of Dessie, Kutaber, BMNH 72.466, ?; [Ethiopia], Metti, BMNH 6.11.1.40, ♂; Abyssinia, Kombolsha, BMNH 0.3.3.14, ♀; Ethiopia, 40 m S. of Lake Tana, Dangila, BMNH 1937.2.24.73-74, 28.1.11.127, 1♂, 1♀ and 1?; Ethiopia, 130 m S.W. of Lake Tana, Gabbai, Wanbera, BMNH 28.1.11.126, ♂; Abyssinia, BMNH 3.5.19.1, ♂; [Ethiopia], Adigrat, BMNH 69.11.4.102 (pretype), ♀; Abyssinia, Mahal Uonz, BMNH 88.12.1.19, ♀; [Ethiopia], Katchisa, Kutai, BMNH 2.9.9.36 (type), ♂. ***"Desmomys" rex***, n = 1: [Ethiopia], Charada Forest, BMNH 6.11.1.34 (type), ♂.

Cytogenetics: The chromosomal analysis was performed on *Desmomys* n. sp. from the Sheko Forest (one female). Somatic metaphases were prepared from bone marrow by the usual air-drying technique according to Ford & Hamerton (1956). Slides were stained with 4% Giemsa in phosphate buffer with pH = 7.0. C-banding was obtained according to Sumner (1972). The chromosomal data on *D. harringtoni* from Ambo area (08°56'N 37°58'E, 2000 m a.s.l.) was courteously contributed by Dr. N.Sh. Bulatova.

Morphometry: External body measurements (L – head-body length, C – tail length, Pl – hind foot length without claws, Au – ear length) and weight (W) were recorded from the specimen labels. On each skull twenty one craniometrical and dental dimensions were measured using a digimatic calliper: condylobasal length (Cb), length of nasals (LoNos), length of frontals (LoFr), length of parietals (LoPar), length of anterior palatal foramen (LoFIn), length of diastema (LoDia), length of maxillary toothrow (LoM^{1-3}), greatest breadth of nasals (LaNos), zygomatic breadth (LaZig), width of ramus superior of processus zygomaticus ossis maxillaris (Lars), width of the zygomatic arch (Laaz), interorbital breadth (LaIor), height of braincase with auditory bulla (H-1 Kr), height of braincase without auditory bulla (H-2 Kr), length of mandibula (LoMd), length of mandibular toothrow (LoM_{1-3}), length of auditory bulla (Bull), greatest breadth of the first upper molar (M^1Br), greatest breadth of braincase (BRCA), depth of upper incisor (DINC), breadth of upper dental arch = breadth across M^1s (BM^1s). Based upon the degree of tooth wear, specimens were grouped into five age classes: 1) juveniles, 2) sub-adults, 3) young adults, 4) old adults, and 5) seniles. To avoid bias of size changes due to growth, only adult specimens (age classes 3-4) were used for morphometry. Principal component analysis (PCA) was performed on cranial measurements of these age classes of *Desmomys* specimens using the Factor Analysis Module of the statistical package STATISTICA 5.11 from StatSoft, Inc.

Results

Chromosomal data

Since the first karyotypic description of *D. harringtoni* based on the study of 21 specimens from Ambo (Orlov & Bulatova 1986, 1997) three more localities were

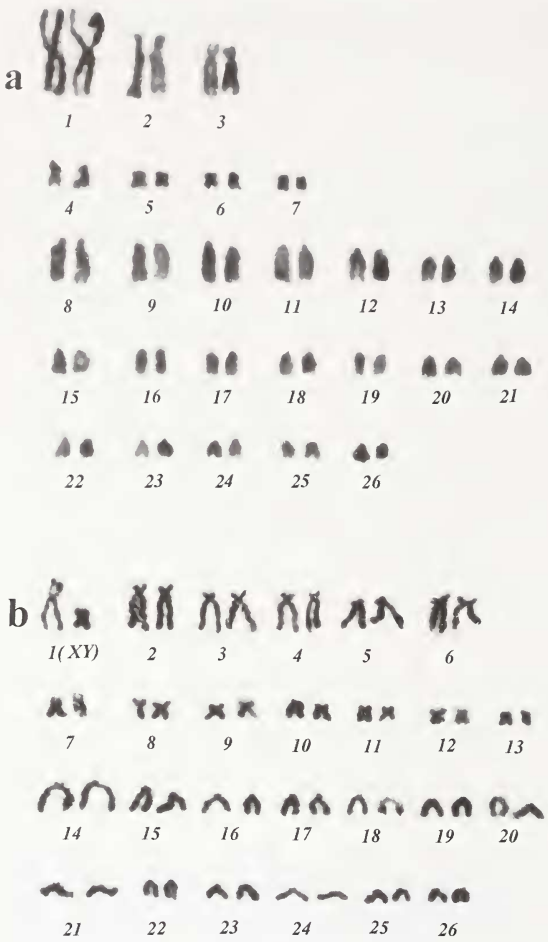


Fig. 2. Routine staining of the chromosomes of (a) *D. yaldeni* n. sp. (ZMMU S-167311, female holotype), and (b) *D. harringtoni* (Ambo area, male).

examined, Addis-Ababa (Baskevich et al. 1995), Sululta and Menagesha (Capanna et al. 1996). In total, 28 specimens have been analyzed and their species attribution to *D. harringtoni* was confirmed. The chromosomal data on this species reported until present coincide in diploid number 2n=52 and slightly differ in the number of bi-armed elements (eleven or twelve pairs). In the karyogram constructed (Fig. 2b), there are 5 larger pairs of bi-armed autosomes and 7 lesser ones, i.e. 12 in total, as well as a large submetacentric X-chromosome. The Y-chromosome is a small metacentric. The rest 13 pairs are acrocentric. The presence of a heterochromatic short arm in several autosome pairs and in the X-chromosome is an important characteristic feature of the karyotype of *D. harringtoni* (Fig. 3b). A variation in the number of autosomes carrying a heterochromatic short arm (from 6 to 9 pairs) is indicated for several populations. This may be associated with the mentioned above variation in proportion of the bi-armed and single-armed elements.

A single examined specimen of *Desmomys* n. sp. (adult female) has the same diploid number, 2n=52. However, several distinctive features were revealed in respect of morphology of its autosomes and putative heterochromosomes, though the latter could not be unequivocally identified in a single female. The karyotype comprises only 7 pairs of bi-armed elements, including four small pairs, two – large and one – extra large in size. The number of acrocentrics amounts to 19 pairs (Fig. 2a). The largest metacentrics may be regarded as the sex XX pair. A striking difference of this karyotype from that of *D. harringtoni* is connected with the absence of short heterochromatic arms in any pair of autosomes. A conventional procedure of C-staining revealed only centromeric blocks of heterochromatin (Fig. 3a).

Certain conclusions can be made from the comparison of these two distinct karyotypes. Although the homology of arms could not be formally proved due to the lack

of G-banding data at present we suppose that most of euchromatic arms of the two 52-chromosome karyotypes are homeologous. Thus, the bi-armed pairs no. 2–7 of *Desmomys* n. sp. well match some of bi-armed autosomes of *D. harringtoni*. Three other bi-armed large elements of the latter species might correspond to acrocentrics present in *Desmomys* n. sp. Either amplification of heterochromatin or elimination of heterochromatic arms might be responsible for transformation of karyotypes in this case. The morphological differences between small autosomes of the two karyotypes may be explained in a similar way. The rearrangement in the X-chromosomes remains unclear, although some alterations in content of heterochromatin must have taken place here as well. Anyway, the distinct karyological characteristics found in *Desmomys* n. sp. undoubtedly confirm its full species rank.

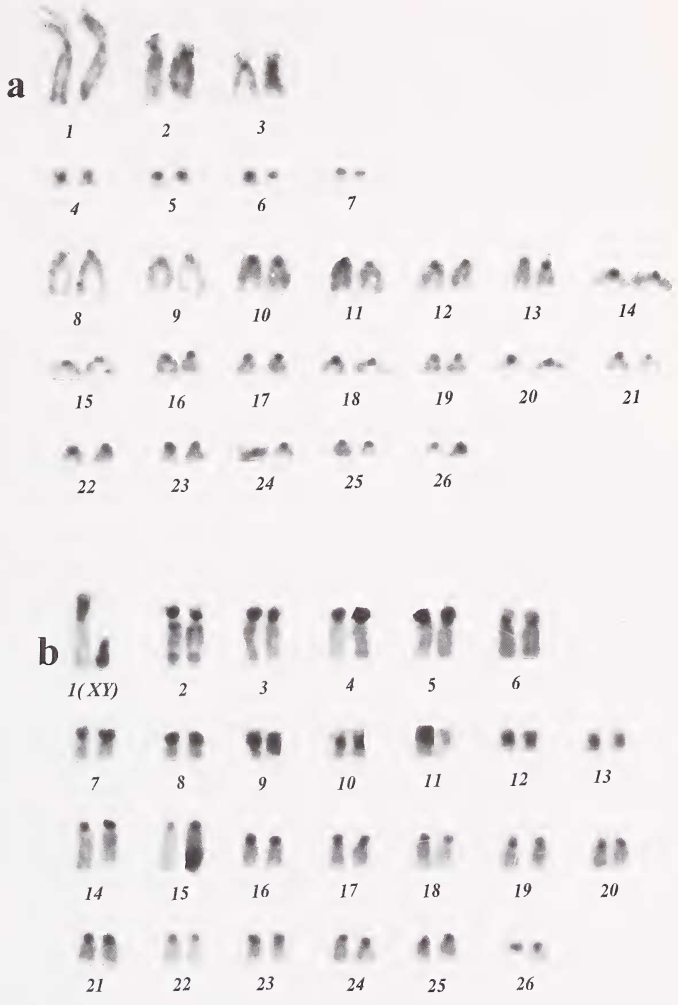


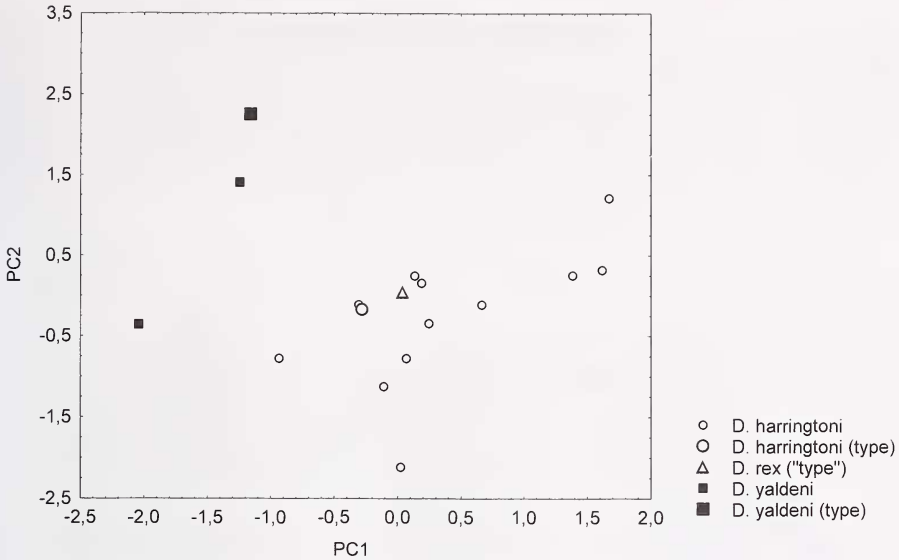
Fig. 3. C-banding of the chromosomes of (a) *D. yaldeni* n. sp. (ZMMU S-167311, female holotype) and (b) *D. harringtoni* (Ambo area, male).

Multivariate craniometry

In this analysis only 12 cranial measurements (Table 1) were included to maximize the number of specimens, especially in the sample of *Desmomys* n. sp. The first two principal components accounted for 52.99% and 16.62% of the total variation, respectively. Projection of exemplars on the first two components, accounting for 69.61% of overall variation, is depicted in Figure 4. All variables have positive loadings on principal component 1 ranging between 0.003 and 0.141, indicating that this component can be interpreted as a variant of size dimension (Table 2). Principal component 2 is characterized by positive correlation with the length and width of nasals and the width of ramus superior of processus zygomaticus ossis maxillaris (loadings $\geq$ 0.20) contrasted by negative correlation

Table 1. Comparisons of measurements (mm), and weight (g) among species of *Desmomys*. The means plus or minus one standard error, range (in parentheses), and number of specimens are listed for each measurement. Only measurements marked with * were retained for the Principal Components Analysis. See text for abbreviations of measurements.

Measurement	*D. yaldeni*		*D. harringtoni*
	Holotype	Ethiopia (Including holotype)	Ethiopia
W	49.0	47.0±2.0 (45–49) 2	71.6±3.5 (50–100) 15
L	132.0	124.50±7.50 (117.0–132.0) 2	128.29±2.68 (110.0–155.0) 21
C	141.0	143.00±2.00 (141.0–145.0) 2	128.50±2.61 (105.0–150.0) 18
Pl	29.00	28.00±1.00 (27.0–29.0) 2	27.43±0.25 (25.0–30.0) 23
Au	17.50	17.75±0.25 (17.5–18.0) 2	18.41±0.34 (14.0–21.0) 22
Cb	28.83	27.92±0.91 (27.01–28.83) 2	30.17±0.49 (28.11–32.10) 9
* Lo Nos	12.02	11.42±0.47 (10.49–12.02) 3	12.44±0.22 (11.21–13.95) 14
* Lo Fr	10.90	10.62±0.14 (10.45–10.90) 3	11.64±0.21 (10.13–13.05) 14
Lo Par	4.97	4.89±0.09 (4.80–4.97) 2	5.65±0.11 (5.07–6.53) 13
* Lo FIn	6.06	5.96±0.18 (5.61–6.20) 3	6.40±0.10 (5.67–7.04) 14
* Lo Dia	8.03	7.70±0.22 (7.29–8.03) 3	8.19±0.12 (7.50–9.12) 14
* Lo M^{1-3}	5.92	5.95±0.05 (5.88–6.05) 3	6.63±0.06 (6.02–6.96) 14
* La Nos	3.90	3.71±0.13 (3.47–3.90) 3	3.89±0.09 (3.45–4.63) 14
La Zig	15.44	14.78±0.67 (14.11–15.44) 2	15.82±0.17 (15.25–16.83) 10
* La rs	1.25	1.05±0.12 (0.85–1.25) 3	0.92±0.03 (0.75–1.15) 14
* La az	1.20	1.10±0.05 (1.05–1.20) 3	1.24±0.03 (1.09–1.50) 14
* La Ior	4.50	4.47±0.05 (4.37–4.55) 3	4.69±0.10 (4.19–5.60) 14
H-1 Kr	10.77	10.51±0.26 (10.25–10.77) 2	11.13±0.17 (10.22–11.64) 8
H-2 Kr	8.50	8.45±0.05 (8.40–8.50) 2	9.27±0.13 (8.75–9.65) 7
Lo Md	17.60	16.92±0.61 (15.70–17.60) 3	18.59±0.23 (17.30–19.92) 13
* Lo M_{1-3}	5.19	5.34±0.09 (5.19–5.49) 3	6.11±0.05 (5.80–6.34) 14
Bull	5.71	5.44±0.27 (5.17–5.71) 2	5.45±0.08 (5.12–5.85) 11
* M^1 Br	1.69	1.75±0.04 (1.69–1.83) 3	2.02±0.02 (1.91–2.14) 14
BRCA	12.91	12.79±0.13 (12.66–12.91) 2	13.29±0.10 (12.80–13.78) 12
* DlNC	1.44	1.41±0.04 (1.34–1.45) 3	1.54±0.01 (1.44–1.63) 14
BM^1s	5.24	5.31±0.07 (5.24–5.37) 2	6.19±0.08 (5.92–6.68) 11



Fig, 4. Bivariate scatter plot of relative positions of specimens of *Desmomys* species in the plane of the first two principal components.

with the width of the first upper molar and the mandibular toothrow length (loadings < –0.27) (Table 2). As it can be seen from Fig. 4 *Desmomys* n. sp. and *D. harringtoni* are clearly distinguished in the plain of the first two principal components, both components making a contribution in this separation. The difference between the two species along the first axis reflects larger average size of *D. harringtoni* while the second component isassociated with changes in skull shape.

Table 2. Results of the Principal Components Analysis.

Variable	PC1	PC2
Lo Nos	0.132	0.200
Lo Fr	0.085	–0.117
Lo Fln	0.105	0.107
Lo Dia	0.135	0.172
Lo M^{1-3}	0.141	–0.128
La Nos	0.109	0.247
La rs	0.003	0.370
La az	0.091	–0.086
La Ior	0.118	0.143
Lo M_{1-3}	0.126	–0.271
M^1 Br	0.119	–0.302
DINC	0.139	0.002
Eigenvalue	6.359	1.994
% Variance	52.99	16.62

Description of the new species

Desmomys yaldeni n. sp.

Holotype: Adult female No. S-167311 (collection of the Zoological Museum of the Moscow State University - ZMMU); Sheko Forest, south-western Ethiopia, 07°04'N 35°30'E, 1930 m a.s.l.; March, 20, 1999; collected by L. A. Lavrenchenko, field number 958. Dry skin and skull (Figs 5, 6, 7, 8).

Fig. 5. *Desmomys yaldeni* n. sp. (ZMMU S-167311, holotype).

Paratypes: Another adult female from the same locality No. S-167312 (ZMMU), dry skin and skull; 1 specimen (sex unknown) No. 72.419 (collection of the Natural History Museum, London), 2 km west of Gore, south-western Ethiopia, 08°08'N 35°30'E, 1800 m a.s.l., January, 8, 1971, collected by Largen, Morris & Yalden, field number 89, preserved in alcohol, skull extracted.

Fig. 6. Dorsal view of skins of *"Desmomys" rex* (BMNH 6.11.1.34, holotype) (left), *Desmomys harringtoni* (ZMMU S-169876) (middle), and *Desmomys yaldeni* n. sp. (ZMMU S-167311, holotype) (right).

Etymology: The author is very pleased to name this new species in honor of Dr. Derek W. Yalden whose numerous articles were a great stimulus and help when our study on Ethiopian small mammals began.

Diagnosis: A typical representative of *Desmomys*. Differs from *D. harringtoni* by darker colouration of shorter dorsal fur, blackish colouration of the dorsal side of hindfeet and shorter and narrower toothrows. Chromosome set: 2n = 52, NFa = 62.

Fig. 7. Ventral view of skins of *"Desmomys" rex* (BMNH 6.11.1.34, holotype) (left), *Desmomys harringtoni* (ZMMU S-169876) (middle), and *Desmomys yaldeni* n. sp. (ZMMU S-167311, holotype) (right).

Description: The hairs of the dorsal fur of *Desmomys yaldeni* n. sp. measure 11 mm in average (vs. 16 mm in *D. harringtoni*). The colouration of the dorsal region is dark brownish-agouti; the directed hairs are bicoloured with grey basal third and black terminal two-thirds (in *D. harringtoni* those have grey basal half and black terminal half). The guard hairs in *D. yaldeni* are grey at base and black in distal half, with a rufous subterminal band, and black tips which produce "speckled" appear-ance. The ventral pelage is whitish with yellowish central longitudinal band, the hairs are grey at the base, white at tip. The underfur of ventral pelage is grey. The ears are blackish, their inner surface is covered with short rufous hairs. The dorsal surface of the forefeet is blackish-rufous, the fingers are black; the dorsal surface of hindfeet is black (in *D. harringtoni* the dorsal surface of the hindfeet is rufous). The claws are blackish. The tail is relatively long (ca. 115% of HB); the hairs are black on the upper tail surface and yellow on the lower surface, however, since they are relatively short the tail does not appear bicoloured (as in *D. harringtoni*). The shape of the skull is similar to the generalized configuration found in both *Pelomys* and *Desmomys* (Fig. 8). The dental pattern is typical of *Desmomys*: upper incisors are ridged (not grooved as are those of *Pelomys*), ridge-like cusp t9 connects central cusp t8 with labial cusp t6 on the first and second upper molars, ridge-like cusp t7 is present on the second upper molar and cusp t5 on the third upper molar is enlarged.

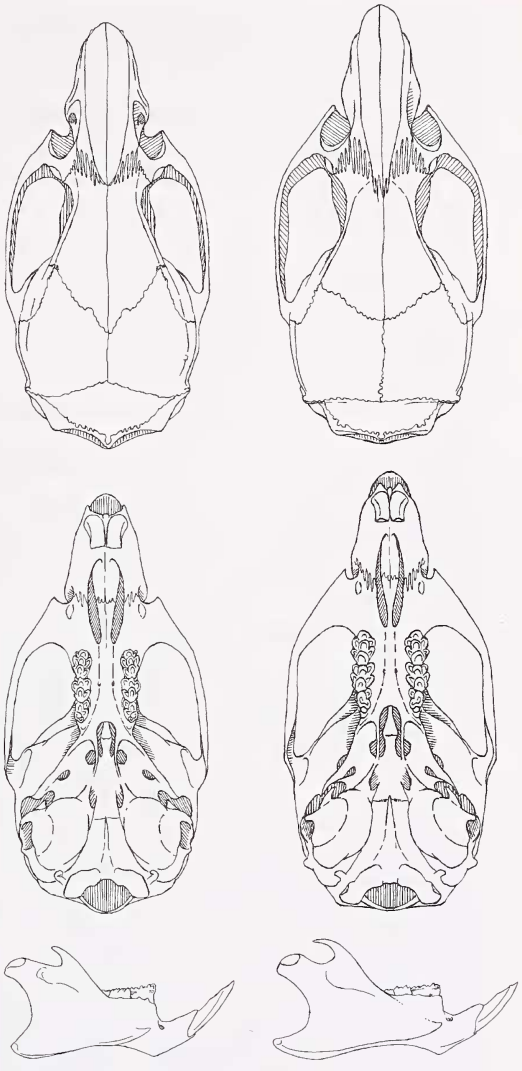


Fig. 8. Views of skull and mandible of *Desmomys yaldeni* n. sp. (ZMMU S-167311, holotype) (left) and *Desmomys harringtoni* (ZMMU S-165982) (right).

On average, the new species is smaller than *D. harringtoni* (Table 1). The differences are statistically significant for the following cranial measurements: LoM^{1-3}, LoM_{1-3}, M^1Br, BM^1s ($p < 0.001$); LoMd, DINC ($p < 0.01$); LoFr, LoPar, LaZig, H-2 Kr ($p < 0.05$).

Distribution: The new species has been found in two localities of south-western Ethiopia: the Sheko Forest (07°04'N 35°30'E, 1930 m a.s.l.) and the vicinities of Gore (08°08'N 35°30'E, 1800 m a.s.l.). We failed to trap *D. yaldeni* in forested site adjacent to the former locality – the Dishi area of the Godare Forest (07°21'N 35°13'E, 1200 m a.s.l.) which is, however, situated at a lower altitude. It remains possible that the currently known species range is incomplete. Nevertheless, we suppose, that it is extremely limited.

Habitat: Two specimens of *D. yaldeni* reported here were captured in disturbed humid afromontane forest with notable abundance of parasitic *Ficus* and undergrowth dominated by *Coffea arabica*. Probably, the well-circumscribed elevational limit is apparently related to factors associated with vegetational communities. Nevertheless, accurate habitat requirements of *D. yaldeni* remain unclear.

Faunal associates: During the trapping session in the Sheko Forest from 19–27 March 1999 that yielded two specimens of *D. yaldeni*, the following seven other rodent species were also collected: *Dendromus melanotis* A. Smith, 1834, *Lophuromys chrysopus* Osgood, 1936, *Lophuromys* cf. *sikapusi* (Temminck, 1853) (the first finding in Ethiopia), *Praomys albipes* (Ruppell, 1842), *Mus mahomet* Rhoads, 1896, *Lemniscomys macculus* (Thomas & Wroughton, 1910) and *Otomys* sp.

Notes on *"Desmomys" rex*

The results of our study of *"Desmomys" rex* type specimen (skin – BMNH 6.11.1.34) support the conclusion of Musser & Carleton (1993) that it is a member of *Mylomys*. The general colouration pattern corresponds to that of *M. dybowskii* (Pousargues, 1893), being much more dull than in all studied specimens of the latter species from BMNH. External measurements of the type specimen (taken from the label: HB=212, Tl=175, Hf=36, Ear=22) are near the upper limits or slightly extend those in *M. dybowskii*. A large scrotum indicates that the type skin belonged to an old adult individual (Fig. 7). More surprisingly, the collection of type specimens in BMNH contains a *Desmomys*-like skull with the label carrying the name of Zaphiro as the collector and the same field number (101) as the skin of the type of *Desmomys rex*. The handwriting on the label for the latter as well as the colour of ink fully correspond to those on the label for the considered skull. However, a note "cannot be correct" was made later on the original label, presumably by Thomas as it is suggested by J. M. Ingles on a newer label dated 9 August 1978. This second label states the following: "? Skull of 6.11.1.34 (coll. No.101 Zaphiro). Type: ***Desmomys rex*** Thomas. Original label marked by O. Thomas "can not be correct" & original description states that skull was missing. This skull apparently put on one side with other "Duplicates" by Thomas & rediscovered 9 August 1978 by J. M. Ingles". Although the situation with this skull seems quite controversial and perplexing apparently the following conclusion can be drawn. Despite the identity of field numbers (101) the skin and the skull under question cannot belong to the same specimen since the latter is indistinguishable from the typical skulls of *D. harringtoni* (see the results of PCA – Fig. 4) while the skin is very similar to those of *Mylomys* (Fig. 6, 7) which is characterized by the skull of significantly larger size. Hence, the skull (BMNH 6.11.1.34) should not be attributed to the type specimen of *D. rex*. The species name "*rex*" by no means refers to the genus *Desmomys*.

Furthermore, we agree with Yalden et al. (1996) in that there is no reason to doubt the Ethiopian origin of the skin since the skull with which it was originally associated (by mistake) belongs to an Ethiopian endemic. We failed to trap any *Mylomys* in the Middle Godjeb Valley (07°15'N 36°47'E, 1220 m a.s.l.) adjacent to the type locality of *D. rex* where a rich savanna fauna comprising six rodent and three crocidurine species was found during the trapping session (79 trapped small mammals) in March (15–20) 1998. Nevertheless, a possibility for the existence, at least in the past, of a population of *Mylomys* in that area should not be discounted; an analogous example of enigmatic Ethiopian murid known only from the holotype is *Nilopegamys plumbeus* Osgood, 1928 (Kerbis Peterhans & Patterson 1995). It is quite possible, that this putative population isolated from the main range of *Mylomys* represents a distinct taxon *M. rex* because the type slightly differs from typical *M. dybowskii* in size and pelage colouration.

Discussion

For the present we recognize two distinct species of the genus *Desmomys*, both of them are endemic to Ethiopia and can be distinguished on the basis of external morphology, cranial measurements and karyotypes. The first species, *D. harringtoni*, is widely distributed throughout the most part of the country (Fig. 1) being found both east and west of the Rift Valley, from 1800 to 3300 m a.s.l. (Yalden et al. 1996). The second one, *D. yaldeni*, was found in a restricted forested area of south-western Ethiopia at altitudes of 1800-1930 m a.s.l. (Fig. 1). *D. harringtoni* occurs in a rather wide range of forest and bush habitats, while *D. yaldeni* inhabits only one type of humid afromontane forest, being presumably more stenobiotic. The most characteristic feature of the latter species is relatively shorter and narrower toothrows which can indicate that *D. yaldeni* feeds mainly on invertebrates and/or fruits and berries. Such diet which is rather uncommon for Muridae and a very restricted range of this species can be associated with some specific life style and habitat requirements remaining yet unknown. We can suspect only that *D. yaldeni* is a more specialized forest dweller than its congener. The weak dentition and relatively longer tail (the latter suggesting proficiency in climbing) can be considered as adaptations to such specialization. Anyway, the distribution area of *D. yaldeni* is extremely small, and the rapid destruction of montane forests might threaten this species in the nearest future. Therefore, this new species must be classified as Vulnerable (criterion D-2) in categories of IUCN Red List.

Generally, the discovery of a new mammal species endemic to Ethiopia indicates that the unique fauna of the country is even more rich than it is assumed today and a potential for finding of other unknown mammals in the country is rather high. It has been suggested (Yalden et al. 1996) that Ethiopian forests have an impoverished mammal fauna compared with those of Uganda and Zaire. Our findings of *Desmomys yaldeni* and *Lophuromys* cf. *sikapusi* in the Sheko Forest demonstrate that the diversity of rodent fauna of Ethiopian south-western forests has been underestimated. Furthermore, we might suppose that the newly described *D. yaldeni* has evolved as specialized forest derivative of an exclusively Ethiopian endemic lineage what would support our previous hypothesis about relatively recent origin of Ethiopian forest

rodent fauna from aboriginal stocks (Lavrenchenko 2000; Lavrenchenko et al. 1999, 2000, 2001).

An approximate estimate of the timing of divergence between the two extant *Desmomys* species and the reconstruction of their phylogenetic relationships with other African Muridae (including *Pelomys* and *Mylomys* genera) require the application of modern molecular techniques (the study is in progress).

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Dr. Leonid A. Lavrenchenko, Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, Leninskii, 33, 117071 Moscow, Russia.